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Science and Technology Perspectives

DEVELOPMENTS

Technology Transfer

(Japan/US) Mitsubishi Heavy Industries (MHI) has turned down a McDonnell Douglas request for LE-5 rocket engine technology developed by MHI and Ishikawajima-Harima. MHI argued that the US firm might use the technology in military systems. Similarly, Kawasaki Heavy Industries (KHI) rejected a Martin Marietta request for the rocket fairing to be used on the H-II booster. KHI argued that because the National Space Development Agency (NASDA) funded the fairing development, KHI could not make a unilateral decision on the matter. Press reports note that Japanese reluctance is also motivated by "a desire to retain this technology as a means of enhancing Japan's competitive edge." (Tokyo NIKKEI AEROSPACE 27 Jul 87; DENPA SHIMBUN 12 Aug 87) Mitchy E. X6333

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FEATURE ARTICLES

REPORTS

PERSPECTIVES selections are based solely on foreign press, books and journals, or radio and television broadcasts. Some of the materials used in this publication will appear as abstracts or translations in FBIS serial reports. Comments and queries regarding this publication may be directed to the Managing Editor (Craig M. [redacted] or to individuals at the numbers listed with items.

STAT

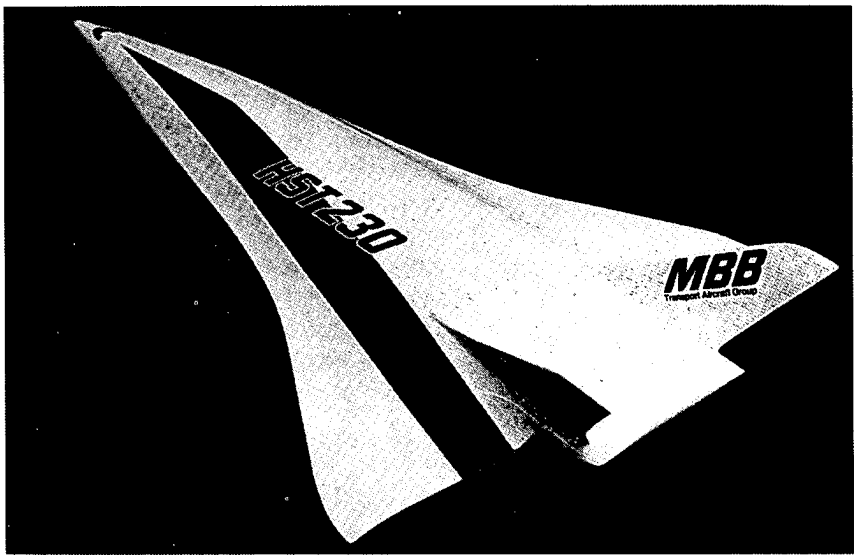
Please note that all extensions have been changed due to relocation.

DEVELOPMENTS

DEVELOPMENTS highlights worldwide S&T events reported in the foreign media. Items followed by an asterisk will be published by FBIS. The contributor's name and telephone number are provided. Please prefix all extensions with a 3.

Aerospace

(FRG) MBB's Transport Aircraft Group is studying a long-range hypersonic commercial aircraft designated the HST 230. The Hypersonic Transport (model pictured below) is designed to carry 250 passengers for distances of 13,000 kilometers at cruising speeds of about Mach 5 and at approximately 30 kilometers altitude—above the ozone layer. MBB believes that only one aircraft design of this type can feasibly be built within Europe or even internationally and that it will require a cooperative effort to master the design, structural, materials, propulsion, flight control, and aerothermodynamic problems. (Munich-Ottobrunn MBB AKTUELL 6-7/87; Stuttgart FLUG REVUE Jul 87) Sharon W. X6340



Femtosecond Laser

(UK) Researchers at St. Andrews University in Scotland have developed a laser capable of producing light pulses lasting only 19 femtoseconds. Using seven mirrors to reflect the light beam, the laser is claimed to have set a new world record for short-duration pulses. Applications are anticipated in ultrarapid optical logic components, optical modulators, and digital optical devices in general. Last year, French researchers announced the development of a femtosecond laser using soliton-like procedures, and Soviet physicists claimed a major breakthrough with the development of a laser with a pulse duration of ten femtoseconds. (Paris L'USINE NOUVELLE 10 Sep 87) Antwerp Unit/Sharon W. X6340

High Definition Television

(West Europe) Recent advances in high definition television (HDTV) were announced in conjunction with the Berlin International Communications Exhibition in August. An HDTV R&D center is to be built in West Berlin at a cost of DM82 million with start-up slated for January 1988. Most prominently however, the Eureka 95 research program was unveiled, although the press did not provide details. Eureka 95 is a pan-European effort to set a 50-Hz HDTV transmission standard and to develop equipment for the digital processing of HDTV signals. Concurrently, Siemens (FRG) announced its plan to market by year-end a high-speed chip that processes TV signals digitally, produces a high-resolution, non-flickering image, and is compatible with all current TV transmission standards. (For more information on HDTV, see PERSPECTIVES Vol. 2, No. 3 pp 4-5.) (Duesseldorf HANDELSBLATT 31 Aug/3 Sep 87) Eva L. X6339

Metallurgy

(France) CNRS and Peugeot researchers are studying the use of lasers in surface hardening techniques that will improve a material's durability. The process involves vaporizing a metal's surface with short, high-energy laser pulses. The outward expansion of the resulting plasma creates a shock wave through the metal, increasing its hardness. Researchers found that the pulse transfer rate is multiplied by a factor of 100 when the irradiated surface is covered with a thin glass sheet to confine the plasma. The method, which can be used in processing steel and aluminum alloys, hardens the metal's surface to a depth of 1 millimeter. (Paris LA RECHERCHE Sep 87) Antwerp Unit/Sharon W. X6340

Superconductivity

(Japan) As part of its Multicore Project, the Science and Technology Agency (STA) will build four strong magnetic field testers at the National Research Institute for Metals (NRIM) over the next three to four years. The testers will be an 80-tesla pulse magnet, a 40-tesla hybrid magnet, a 20-tesla large-aperture superconducting magnet, and a super-precision magnetic field property tester. The four testers will cost an estimated 10 billion yen. A budget of 3 billion yen has been proposed for FY88. The Multicore Project will focus on development of high-temperature, high-current-density superconducting materials and manufacturing technology. (In a related development, the Ministry of International Trade and Industry [MITI] has proposed a 1 billion yen budget for superconductivity research in FY88.) (Tokyo NIKKAN KOGYO SHIMBUN 4 Aug 87) Junko A. X6335

(Japan) Sumitomo Heavy Industries, in cooperation with the Japan Shipbuilding Apparatus Development Organization, has developed a prototype superconducting power system for possible use in submarines. The system, which incorporates superconducting magnetic coils in its 650-horsepower generators, is expected to provide quieter operation. Sumitomo plans to collaborate with the Japan Defense Agency's Technology Research Development Institute in designing of a vessel that will use a 20,000-horsepower version of the system. The Sumitomo system would be significantly smaller and lighter than conventional power systems. (Tokyo NIKKEI SANGYO SHIMBUN 24 Aug 87) Mitchy E. X6333

(UK) The UK has allocated 2 million pounds to finance a center for superconductivity research. The Science and Engineering Research Council will decide which of 11 candidate universities will be the site of this

laboratory. A second center is also planned, but the call for possible sites will not go out until the end of the year. Oxford University has already set up a coordinating authority on superconductivity with a staff of more than 50. (Paris L'USINE NOUVELLE 10 Sep 87) Sharon W. X6340

Telecommunications

(Hungary) As part of Hungary's Seventh Five-Year Plan, the telecommunications industry will receive a 40-million-forint budget for equipment modernization. A portion of these funds will come from a $70-million World Bank loan that must be repaid in 15 years after a three-year grace period. The funds will be used to expand Hungary's telephone network and to develop the data transfer, telefaxing, and teletex equipment sector. In addition, Hungary will purchase microwave, analog, and digital equipment as well as systems that will use fiber optic cable. (Budapest COMPUTERWORLD/SZAMITASTECHNIKA No. 16, 12 Aug 87) Sari P. X6342

(Japan) The Ministry of Posts and Telecommunications' Research Laboratory (RRL) has developed a compact, portable transceiver system for satellite communications. Weighing 13 kilograms, the system consists of an antenna 5 cm in diameter, a transceiver, a controlling device, and a power source (all packed in a metallic attache case 40 cm x 13.5 cm x 35 cm). The system is scheduled to be tested using the ETS-V satellite, launched in August. (For more on the ETS-V, see Perspectives Vol. 2, No. 14 pp 1, 7-8.) The system uses 1.5 to 1.6 GHz in the L band and is capable of sending data at 100 bits/second. Initially the system will be used for business and emergency communications with possible future application in a mobile phone network. (Tokyo DENPA SHIMBUN 31 Jul 87, NIHON KOGYO SHIMBUN 18 Aug 87) Akiko S. X6334

USSR: FACTORY AUTOMATION INITIATIVE

Key Points: The Soviet Union is aiming at a massive increase in production capacity with the establishment of the Rotor MNTK (Interbranch Scientific-Technical Complex). Although funding has been allocated and production facilities established, training the necessary personnel for this ambitious objective continues to be a problem, according to IZVESTIYA (9 Feb 87) and EKONOMICHESKAYA GAZETA (Feb 87). (For previous reporting on the establishment of MNTKs, see PERSPECTIVES Vol. 1, No. 7 pp 6-7.)

The Rotor Interbranch Complex, headed by the Design Bureau for Automated Production Lines (KBAL), is made up of 29 organizations in 22 ministries. According to L.N. Koshkin, its general director, Rotor's task is to increase production capacity ten-fold by the use of automated production lines (rotornyye i rotorno-konveyernyye linii). The 12th Five-Year Plan provides Rotor with 234 million rubles for scientific research and experimental work and 836 million rubles for operating expenditures.

Rotor is charged with the technical supervision of all automated production lines throughout CEMA. As part of this initiative, Rotor is expanding existing training centers and laboratory and pilot production facilities. In addition, a large design complex will be built at Klimovsk (south of Moscow) that will include a production and training center. Although at the beginning of the 12th Five-Year Plan each of the machine-building ministries planned to introduce three to five automated lines, these plans have now been revised to include about 8,000 new lines. To date, about 200 of these lines have been installed, according to Koshkin.

The production of prototypes will be a priority for Rotor this year. To expedite this, several machine-building plants have been converted from series to prototype production. The Ministry of Machine Tools and Tool Building Industry and the USSR Gosplan have approved the conversion of the Voznesensk press assembly plant for production of high-performance automated lines used for mass production of plastic items. Although the plant usually produces electrical equipment, it will now produce robots for automated production lines as well. In addition, the Cherkassk Rotor Production Association has allocated 20,000 square meters for four new plants containing 215 pieces of equipment. Oblast party committees will be responsible for providing temporary premises, manning them, and establishing cooperation with regional industry.

The Rotor initiative is expected to streamline industrial production by introducing labor-saving automated processes. The installation of automated lines at the Radiodetal capacitor plant in Voronezh, for example, has resulted in the elimination of about 1400 assembly line jobs. According to Koshkin, all future capacitor manufacturing plants will be built on the Radiodetal model.

Although two to three hours of on-site lectures are currently being given to about 3,000 trainees, Koshkin believes that the Academy of the National Economy under the Council of Ministers should organize permanent courses of about 10 hours of theory plus hands-on training with advanced equipment. Under ideal circumstances, three- to four-month courses with additional practical experience, supervised by design bureau specialists, would be given to all engineering and technical personnel. If 2,000 to 3,000 auotmated lines are built, about 30,000 to 40,000 technicians would have to be trained during the next Five-Year Plan. The main design bureau would have to train about 1,000 technicians a year. However, in reality only 50 or 60 technicians are being trained each year, because of a lack of personnel housing. Therefore, Koshkin proposes the construction of a 200- to 300-apartment complex in Moscow for trainees.

Irene A. X6331

USSR: AIDS SCREENING IN MOSCOW

Key Points: Soviet authorities are beginning to release clinical and epidemiological studies of AIDS infection in the USSR. A screening, probably conducted in 1986, of 11,567 individuals in Moscow for antibodies to HIV (human immunodeficiency virus, the AIDS virus) resulted in the detection of 20 individuals who tested positive, all of whom were students from African countries. Soviet experts believe that AIDS could pose an increasing health threat in Moscow, according to ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII (Jul 87). (For previous reporting on AIDS in the Soviet Union, see PERSPECTIVES Vol. 2, No. 13 p 10.)

In an attempt to establish the level of infection by HIV in the Moscow population, a team led by V. V. Pokrovskiy of the USSR Ministry of Health's Central Scientific Research Institute of Epidemiology screened 5,155 residents of Moscow and 6,412 foreign students living in Moscow for antibodies to HIV.

Individuals were selected based on epidemiological and clinical criteria for risk groups. The study included individuals who had visited dermatological and venereal disease clinics, patients from several Moscow hospitals who were suspected of being infected by HIV, and a large group of students from higher educational institutions undergoing yearly medical examinations. Antibodies to HIV were detected with parallel use of ELISA test kits from Organon Tekhnika and Antigen and were confirmed by Western blot analysis.

The results obtained among different groups are shown below.

Group	*Number Examined*	*Number of Seropositives*
Individuals visiting STD clinics including:*	*2,015*	*3*
—homosexuals, bisexuals	*154*	*0*
—drug users	*11*	*0*
Patients:		
—with fever of uncertain etiology	*140*	*1*
—with pneumonia	*200*	*0*
—with lymphoadenopathy of various etiology	*210*	*0*
—with other diseases	*1,212*	*2*
Healthy individuals	*7,790*	*14*
Total	*11,567*	*20*

The 20 seropositive individuals included 17 men and three women from equatorial regions of Africa. Five men had sought medical care for genital lesions (two of them also had fever), two women had sought care for fever and acute stomach pains, and the remainder of the seropositive individuals were detected during yearly medical screening. After a complete examination, two individuals were diagnosed as having AIDS, 16 had generalized lymphoadenopathy, and two were asymptomatic.

Background information obtained for the seropositive individuals included age, sex, length of time in the USSR, clinical symptoms, sexual history (including number of contacts while in the USSR), and history of medical injections while in their native countries. All individuals denied homosexuality and drug use. Based on this data, the authors believe that HIV infection was due to heterosexual contacts or medical injections in their native countries, where AIDS is endemic.

* Sexually transmitted diseases

The majority of seropositive individuals had resided in Moscow for one to seven months and six individuals had been there for more than a year. Three sexual contacts of seropositive individuals were identified and were seronegative at the time of examination. Three seropositive individuals reported casual sexual encounters with women in Moscow.

The authors conclude that HIV infection is still not widespread in Moscow, but the significant percentage of seropositive individuals from abroad makes infection by heterosexual contact likely.

All patients were hospitalized at the clinic of the Central Scientific Research Institute of Epidemiology. According to a clinical study of these patients reported in TERAPEVTICHESKIY ARKHIV (Jul 87), the two AIDS patients died while hospitalized in the USSR. In two case histories of patients with generalized lymphoadenopathy, the patients were initially diagnosed as having adenoviral infection. The authors point out that HIV infection was not suspected by the physicians who initially treated the patients because the disease had not yet been described in Soviet medical literature.

Fearing a public health scare, the USSR Ministry of Health had rejected an article on AIDS by E. R. Zabarovskiy of the Institute of Molecular Biology submitted in late 1985. An updated version, however, finally appeared a year and a half later in the June 1987 issue of KHIMIYA I ZHIZN.

Marilyn B. X6330

USSR: FIRST SUPERTRANSURANIUM ELEMENT CLAIMED

Key Points: In August, physicists at the Joint Institute of Nuclear Research in Dubna issued reports to the Soviet media claiming the synthesis of element 110, the first so-called supertransuranium element. The reported discovery theoretically will open the way to the synthesis of other superheavy, long-lived elements with important applications in the production of nuclear energy and in medicine, according to SOVETSKAYA ROSSIYA (18 Aug), IZVESTIYA (19 Aug), and DOKLADY AKADEMII NAUK SSSR (Vol. 295, No. 4., 87).

A team of Soviet physicists led by Georgiy N. Flerov and Yuriy Oganesyan at the Joint Institute of Nuclear Research in Dubna reportedly have synthesized element 110, which is being called the first supertransuranium element. Scientists from the GDR, Romania, and France also participated in the research effort. Artificially produced transuranium elements with relatively long half-lives have been used as isotopes for nuclear fuels, medical diagnosis, and thermal power sources for generating electricity on spacecraft. Supertransuranium elements are expected to have all of the applications of transuranium elements cited above but should be much easier to use due to their longer half-lives.

The Joint Institute's U-400 cyclotron, which is capable of accelerating heavy ions to one-tenth the speed of light, was used in a two-year effort to synthesize the element. The U-400 had also been used by Flerov and Oganesyan in research that led to the synthesis (in 1974) of transuranium element 106. The synthesis of 110 was achieved through the bombardment of uranium nuclei with argon-40 nuclei and the bombardment of thorium nuclei with calcium-44 nuclei. The uranium and argon nuclei contained 92 and 18 protons respectively while the thorium and calcium nuclei contained 90 and 20 protons respectively.

Element 110 differs from the earlier transuranium elements in that it has a relatively long half-life of approximately 1/100 second. The Soviet team claims that the findings provide evidence for the existence of an "island" of superheavy elements that are highly resistant to radioactive decay. Flerov believes that these relatively stable elements, having closed nucleon shells, will be found in the element range 114 through 120. By comparison, the isotope of element 108, discovered by the FRG's Institute for Heavy Ion Research, has a half-life of less than 1/500 second, whereas element 109, discovered by the same institute, has a half-life twice as long as 108. The half-life of 110's isotope is reportedly more than double that of 109. Atomic theory predicts that superheavy elements in the "island of stability" will have a neutron-to-proton ratio giving them half-lives of millions of years.

Flerov has discussed the "formidable psychological barrier" that his team had to overcome after the FRG's Institute of Heavy Ion Research announced that it would be impossible to synthesize element 110 by present technology. He notes that although Dubna scientists began to lose confidence in the U-400, the team finally achieved success by using an innovative bombardment method (not further detailed) that had been ruled out by FRG researchers.

According to Flerov, the synthesis of 110 has been repeated in the presence of international observers and the validity of the method itself has been verified by using it to duplicate the synthesis of transuranium elements 103, 104, and 105. The Dubna team has begun experiments aimed at synthesizing element 111.

John H. X6320

REPORTS

REPORTS surveys science and technology trends as detailed in articles, books, and journals. It also includes summaries and listings of articles and books which may serve as potential sources for future research. Conference proceedings will occasionally be presented in this section.

SUPERCONDUCTIVITY UPDATE

USSR/JAPAN: SUPERCONDUCTING GENERATORS

Soviet scientists claim to have developed a cost-effective 300,000-kilowatt superconducting generator. In a parallel development, Japan's Ministry of International Trade and Industry (MITI) will begin development work on a superconducting generator as a Moonlight Project (Japan's energy conservation R&D program) goal for 1988, according to August reports in the Tokyo press.

Built by the USSR Academy of Sciences' Leningrad Scientific Center, the Soviet generator, which is now being performance tested, has cryogenically cooled superconducting wires of niobium-tin and niobium-titanium in its electromagnet and armature. Cooled with liquid helium, the superconducting magnet can produce intense magnetic fields far beyond the capacities of conventional magnets.

The new generator is reportedly only an intermediate step in the Soviet development of powerful electric superconductors, according to Dr. Igor Glebov, chairman of the Leningrad Scientific Center and a key figure in Soviet superconductivity R&D policy. Soviet scientists are currently designing a prototype 1.2-megawatt superconducting generator for which they are trying to develop high-temperature superconducting wire cooled with liquid nitrogen. Should development of high-temperature wire prove impractical, a 1.2-megawatt generator using liquid helium-cooled superconducting alloy wires would "still be a revolutionary new source of inexpensive electric power" because of its higher conversion efficiency and its smaller volume and weight compared to conventional generators, according to Glebov. The increased efficiency alone reportedly would pay for development costs.

MITI's Agency of Industrial Science & Technology (AIST) plans to build a 70,000 kilowatt superconducting generator by 1995 at an estimated cost of 20 billion yen, with a 200,000 kilowatt unit planned for operation by the year 2000. The generator will use niobium-titanium alloy wire cooled with liquid helium. Japanese efforts are paralleling those of the Soviets in the drive to create high-temperature superconducting wire cooled with liquid nitrogen.

Generator R&D will be conducted through a series of government contracts with the Superconducting Generator Technology Research Group, consisting of 11 Japanese companies (not further identified) and the Central Electric Research Institute. The group will be formally established in November.

John H. X6320/Junko A. X6335; Mitchy E. X6333

FRG: SUPERCONDUCTIVITY RESEARCH

The Federal Ministry of Research and Technology (BMFT) has laid out a three-phase plan which includes additional basic research funding (spending rose from DM1 million in 1984 to DM6.5 million in 1987) and is aimed at strengthening the FRG's international competitive position in development of new high-temperature superconductors, according to the BMFT JOURNAL (Aug 87).

In the first phase of its plan, the BMFT has made available short-term supplementary funding to 30 university research groups for continued basic studies in high-temperature superconductivity.

A second three- to five-year phase provides for an increase in basic research in new superconducting materials and techniques for their production. Coordination among interdisciplinary groups will be improved and information exchange expanded and accelerated. A technology impact assessment is also planned for this phase.

In a third phase lasting from seven to 10 years, the BMFT plans to carry out joint projects with institute and industrial researchers on such topics as magnets, cables, energy storage devices, and generators.

(For previous reporting on FRG superconductivity research, see PERSPECTIVES Vol. 2, No. 14 p 2.)

Sharon W. X6340

JAPAN: GOVERNMENT PROMOTES R&D

The Ministry of International Trade and Industry (MITI) is proposing the establishment of an "Industrial Technology R&D Organization" (tentative title) to stimulate domestic R&D and promote research in advanced technologies. Initially funded by government and private contributions, the organization will establish research facilities for lease to Japanese private firms and foreign companies. The ITRDO will be established next fall, pending Ministry of Finance (MOF) approval. MITI will ask the MOF for some 15 billion yen in FY89 project funding (the money to come from the planned sale of Nippon Telephone & Telegraph stock). MITI plans to establish the following facilities as part of the ITRDO initiative:

- A high polymer materials evaluation center in Tsukuba Science City
- A laser facility in the Kanto area
- An ion beam facility in the Kansai area
- A marine biotechnology facility in Shimizu, Shizuoka prefecture
- The construction of an international joint center to promote the Human Frontier Science Program.

Tom C. X6335

WEST EUROPE: SEMICONDUCTOR INDUSTRY LOBBY

The West European semiconductor industry has organized to form the European Electronic Component Manufacturer's Association (EECA). The Brussels-based semiconductor manufacturers' lobby is seeking to protect Europe's integrated circuit industry and future industrial position.

An EECA brochure entitled AN INTEGRATED FUTURE FOR EUROPE (17 Sep 87) identifies the strategic threats to European IC producers and advocates a systematic response at the European Community level. The EECA intends to pursue the following goals:

- A policy aimed at making the European integrated circuit industry competitive by world standards. This policy would include:
  - — well-focused, effectively subsidized R&D programs such as ESPRIT, EUREKA, and RACE
  - — development programs designed to produce significant progress.
- Stimulation of the European market through:
  - — increased efforts to promote the use of electronics
  - — additional pan-European projects
  - — standardization.
- Tax breaks and low-cost loans for plant equipment modernization during the next five to 10 years.
- Supports for the IC industry that would allow long-term policy to become effective, including:
  - — retention of current import duties
  - — establishment of more realistic duty suspension procedures
  - — implementation of equitable European origin rules.

The EECA believes these steps would help make West Europe competitive into the 21st century.

Antwerp Unit/Sharon W. X6340

EC: ESPRIT PROGRAM DOCUMENTS

Draft Program

The Commission of the European Communities has issued the "Draft ESPRIT Work Programme" for 1987, which devotes 130 pages to a detailed discussion of European Commission R&D goals in telecommunications and advanced data processing. The report, issued on 22 July 1987, identifies three overall ESPRIT objectives:

— Provide European industry with basic competitive technologies for the 1990s

— Promote industrial cooperation in precompetitive R&D

— Develop international standards.

According to the document, the Commission is placing increased emphasis on applied technologies and assistance for smaller firms.

Projects

The EC's Directorate General XIII, which is responsible for telecommunications, information industries, and innovation, has also issued eight documents on ESPRIT. Published in June 1987, these monographs present an overview of R&D goals, major corporate participants, time frames, and project leaders for all ESPRIT activities, plus detailed information on selected individual projects:

- ESPRIT, 1987 Information Package for the European Strategic Programme for Research and Development in Information Technology, Fourth Call for Proposals (50 pages)
- The ESPRIT Programme, Project Synopses, ESPRIT Projects Index and Associated Sub-Programme Overviews (47 pages)
- The ESPRIT Programme, Project Synopses, Sub-Programme 1: Advanced Microelectronics (64 pages)
- The ESPRIT Programme, Project Synopses, Sub-Programme 2: Software Technology (52 pages)
- The ESPRIT Programme, Project Synopses, Sub-Programme 3: Advanced Information Processing (49 pages)
- The ESPRIT Programme, Project Synopses, Sub-Programme 4: Office Systems (65 pages)
- The ESPRIT Programme, Project Synopses, Sub-Programme 5: Computer Integrated Manufacturing (37 pages)
- The ESPRIT Programme, Project Synopses, Infrastructure Actions: Information Exchange Systems (9 pages)

The above documents are available on request.

Antwerp Unit/Sharon W. X6340

PREVIEWS

PREVIEWS is an annotated list of selected science and technology items being translated by FBIS for publication in the reports specified below. The list may also contain previously published items of wide consumer interest.

SCIENCE & TECHNOLOGY/CHINA

COMPUTER SECURITY ISSUES EXAMINED, PROPOSALS MADE

Five articles discuss various aspects of computer security, including electromagnetic-leakage countermeasures, secure transmissions, and security-related legislation. (Beijing JISUANJI SHIJIE 8 Sep 87)

SCIENCE & TECHNOLOGY/EUROPE & LATIN AMERICA

FRAUNHOFER STUDY EXAMINES ADVANCED TECHNOLOGY FIELDS

The article discusses the contents of a report issued by the Fraunhofer Institute for Systems Technology and Innovative Research (ISI) on the FRG's standing relative to Japan and the United States in key technologies. The report concludes that the FRG leads Japan in laser technologies and genetic engineering but lags behind the United States and Japan in enzyme research and robotics. (Bonn TECHNOLOGIE NACHRICHTEN-PROGRAMM INFORMATIONEN 20 Aug 87)

EC BASIC RESEARCH PROGRAM UNDERGOING FURTHER REVISION

The article presents a discussion of the program, approved by the EC Council in July. The actual release of the ECU6.5 billion in approved funding to specific R&D programs is still under discussion. Final allocation decisions will be made in November when European research ministers meet. (Bonn VDI NACHRICHTEN 14 Aug 87)

BRITISH ALVEY PROJECT EXAMINED

The article provides a comprehensive description of the "Flagship" project, part of the Alvey Program, which seeks to combine parallel architecture, declarative language, and program transformation technologies. (Amsterdam COMPUTABLE 14 Aug 87)

TELECOMMUNICATIONS

EUROPEAN FIRMS FORM HDTV STANDARDIZATION "POOL"

The article reports on the Philips, Thomson, Bosch, and Thorn-EMI effort to establish a common standard for high definition TV. European manufacturers expect Japan to develop a similar system in order to export its products to Europe. (Milan ITALIA OGGI 2 Sep 87)

ERICSSON VENTURE WITH TELIT SEEKS TO BLOCK SIEMENS

The article presents an interview with Ericsson's president, Bjorn Svesberg, on the company's negotiations with Telit to form a telecommunications "cartel" in Europe, a merger recently suggested by Siemens as well. Svesberg states that the joint venture would effectively block Siemens' bid to join Telit in a similar R&D arrangement for special networks and telecommunications systems. (Milan ITALIA OGGI 1 Sep 87)